

Claims

- [1] A flexible transmission shaft for transmitting a torque from a drive source to a driven load, the flexible transmission shaft comprising a pipe-shaped shaft, which has one or more slits extending in a circumferential direction of the shaft, each of the slits having two opposed surfaces isolated from each other by the slit, a plurality of protrusions protruding from one of the opposed surfaces, and a plurality of recessions formed in the other one of the opposed surfaces to receive and support the protrusions therein.
- [2] The flexible transmission shaft of claim 1, wherein the one or more slits circle the shaft such that ends of the one or more slits meet each other, and the one or more slits are formed in a longitudinal direction of the shaft.
- [3] The flexible transmission shaft of claim 1, wherein the slit extends spirally along the shaft.
- [4] The flexible transmission shaft of any one of claims 1 through 3, wherein a minimum width of an inlet side of the recessions is less than a maximum width of the protrusions so that the protrusions supported in the recessions are prevented from being separated from the recessions.
- [5] The flexible transmission shaft of any one of claims 1 through 3, wherein the opposite surface where the protrusions are formed and the opposite surface where the recessions are formed are spaced by a predetermined distance from each other so that the protrusions inserted into the recessions can move in the recessions.
- [6] The flexible transmission shaft of any one of claims 1 through 3, wherein the slit has a repeated 'S' pattern.
- [7] The flexible transmission shaft of any one of claims 1 through 3, wherein the flexible transmission shaft has one end in which a first groove is formed to receive a torque from the drive source and other end in which a second groove is formed to offer the torque to the driven load.
- [8] The flexible transmission shaft of claim 7, wherein a wrench is inserted in the first groove and a bolt or nut is inserted in the second groove.